

Notice of Allowability

Application No.

10/691,940

Examiner

Nikita Wells

Applicant(s)

WANG ET AL.

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Phone Interview and Examiner's Amendment.
2. ☒ The allowed claim(s) is/are 1-52.
3. ☒ The drawings filed on 22 October 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 021605
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 021605.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Nikita Wells
 Primary Examiner
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Detailed Action

Examiner's amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mary Olynick on February 15, 2005.

The Examiner initiated an interview with the Applicant to clarify some minor details in the independent claims in order that the application could be allowed. The changes in claims are as follows:

In claim 17, lines 3, 6, and 9: --charged particle-- has been inserted before "beam".

In claims 35, 39, and 47, line 1: --charged particle-- has been inserted before "beam".

In claims 40, line 7: --charged particle-- has been inserted before the second "beam".

In claim 43, line 1: --charged particle-- has been inserted before the first "beam".

In claims 48 and 50, line 2: --charged particle-- has been inserted before the second "beam".

Allowable Subject Matter

2. Claims 1-52 are allowed.
3. The following is an examiner's statement of reasons for allowance:

With respect to the independent claims 1, 17, and 40, prior art fails to disclose or make obvious, in combination with the other recited features of the claim limitations, an a method and

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apparatus for determining the characteristic X-ray emission data from a certain volume of interconnect structure in a sample, comprising: directing an electron beam towards the surface of the sample to thereby generate X-rays emitted from the volume of the interconnect structure in the sample; detecting the X-rays emitted from the sample; and characterizing the distribution and characteristics of one or more voids in the interconnect structure based on the detected X-rays.

The dependent claims 2-16, 18-39, and 41-52 are allowable by virtue of their dependence upon the independent claims 1, 17, and 40, respectively.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sugimoto et al. (5,877,498) disclose a method and apparatus for X-ray analysis for the inspection of opening states of fine holes by applying a finely converged electron beam to the surface of a sample and observing the X-rays generated by the surface.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikita Wells whose telephone number is (571) 272-2484. The examiner can normally be reached on 8:30 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The central fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Nikita Wells". The signature is fluid and cursive, with the first name "Nikita" and the last name "Wells" clearly distinguishable.

Nikita Wells, Primary Examiner
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February 16, 2005